

It's time to confront a major threat to our global environment: cows. Yup – turns out that livestock are a major contributor to greenhouse gas pollution. Right up there with cars, planes and trains.

And at the rate we're producing beef worldwide, emissions from cows – along with other harmful practices in beef production – threaten to mess up our climate, land and water. Big time.

On average, Americans eat three times more meat than people in other countries. From the end of World War II to the mid-1970s, beef consumption per person doubled. The U.S. is now the largest beef producer in the world. Our beef industry is a powerhouse worth \$74 billion a year and providing millions of jobs.

Today, more and more Americans are choosing chicken and pork, even tofu. But much of the meat we eat is still beef

Let's look at an all-American food: the hamburger. On average, we eat about three burgers per week. So let's see: If all 313 million Americans eat three burgers per week, that's 156 burgers per person per year. All together, that's more than 48 billion burgers every year.

A quarter-pounder at a fast food joint costs 3 or 4 bucks. That's pretty cheap. But what we don't pay for at the counter, we end up paying for in other ways. What are the hidden costs?

First of all, cows take up a lot of space. Worldwide, livestock use 30 percent of the earth's entire land area – that's counting pastures and land used to grow grain for feed. We use about eight times as much land for feeding animals as for feeding humans. And in places like Brazil, acres of forest are still being cleared for livestock – which creates pollution and also removes a perfect sponge for absorbing carbon dioxide.

And did someone mention water? It takes about 1,800 gallons of water to make a single pound of grain-fed beef – that's about four times the amount for chicken and more than 10 times the amount for a pound of wheat.

Why does it take so much land and water to feed cows? Well, for one thing, cows eat a lot.

During the first six months, a calf eats and eats and eats. When it's about 700 pounds, it's sold at auction – usually to a feedlot, which is like a very crowded cow city

At the feedlot, the cow continues to eat and eat and eat. At most feedlots, cows eat a mixture of soy and corn.

This whole feed system's pretty new. Before the 1970s, cows ate mostly grass. Then Congress passed a farm bill that changed everything. The government started paying farmers to grow feed crops like corn and soy. It also helped pay for more fertilizer. So, voila: Now corn is in everything from sodas to cereal. And most of the country's 90 million cows now get corn for breakfast, lunch and dinner.

Unfortunately, cows are built to digest grass. Corn can make them bloat with gas, and cows make a lot of gas.

This is no joke.

See, cows are ruminants – meaning they create methane gas when they digest food. Chicken and pigs don't. Methane has 21 times more climate-changing power than CO₂. In America, cows produce more greenhouse gas than 22 million cars per year.

America's cows create about 500 million tons of manure in a year. That's three times as much as we humans do. Cow manure also creates nitrous oxide, which has 300 times the global warming effect of CO₂. Cow manure is responsible for two-thirds of all the nitrous oxide pollution in the world.

There's another source of nitrous oxide in a cow's life cycle: fertilizer. We Americans use 17 billion pounds of nitrogen fertilizer to grow feed for our cows.

When runoff from fertilizer and manure flow into rivers, and then to the ocean, they create huge algae blooms, which suck the oxygen out of the water and leave dead zones where no life can survive.

Anyway, back to the feedlot. Once the cows are fattened up, they head to the slaughterhouse.

Slaughterhouses create about 30 million pounds of contaminants a year – mainly nitrates and ammonia used to disinfect meat.

From the slaughterhouse, the beef is shipped to big processing centers, where California beef is mixed with Texas beef and Colorado beef. One burger patty can contain the DNA of more than a thousand cows. That means a single case of E. coli could easily spread to thousands of burgers. Trucking all that beef around creates pollution, too.

This isn't an exact science, and the numbers vary depending on how the cows were raised. But a single quarter-pounder clocks in at about 6½ pounds of greenhouse gases. That might not sound like much, but with Americans eating three burgers per week, that's more than 158 million tons of greenhouse gases per year – about the same amount of greenhouse gas as 34 coal-fired power plants.

It's not the cow's fault. It's the system we've created to mass-produce beef that's the problem. Too many burgers take a toll on the environment. They can take a toll on your body, too.

This is the recommended daily diet. And this is how most Americans actually eat. We eat way too much meat, grains, fat and sugar, and not enough fruits and vegetables.

Many studies show that eating too much red meat can lead to heart disease, high blood pressure and, in some cases, diabetes. The hidden costs add up.

One research group figured the cost just in greenhouse gases, water for growing cattle feed and health care at about \$1.51 for every burger. Multiply that by the 48 billion burgers Americans eat every year, and that's more than \$72 billion. We don't pay it at the store or at the fast food joint. But we pay it in other ways.

So what can we do?

Well, we don't have to give up meat to change our impact. Cutting out just one burger per week would remove as much greenhouse gas pollution as taking your car off the road for 350 miles. If all Americans ate no meat or cheese one day a week, it would have the same climate-change prevention effect as taking 7.6 million cars off the road for one year.

And while it's more expensive, grass-fed beef does less damage to the environment.

Even the smallest choices make a big difference – to the environment, to our neighbors, to our health. In the U.S., people are starting to eat less meat. But the rest of the world is eating more. Just imagine: What if all 1.3 billion people in China ate three burgers a week – like we do?

Could our planet keep up?

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